

Understanding the Significance of Cannabidiols and their Possible Use in Sport

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Abstract:- The paper provides an overview and review of the use, knowledge and importance of cannabidiol (CBD) on stakeholders in the sports system, on the example of members of the Sports Community of the City of Zadar. In particular, a review is given of the possible harmfulness of taking substances that contain prohibited amounts and ingredients for athletes, ie unfounded and unconfirmed independent research. The method and purpose of taking cannabidiol by the stakeholders of the sports system are presented, with special reference to athletes in the field of recreation. The survey, through a questionnaire, determined whether athletes and sports professionals are sufficiently aware of what are cannabidiols, and what is the impact on the health status of athletes when using cannabidiol and the possible harm to the health of athletes in uncontrolled cannabidiol intake. In conclusion, research has shown that athletes and sports professionals do not know enough about what are cannabidiols, and what is the impact of their use on athletes and recreational athletes. Therefore, the conclusion is that it is necessary to educate these stakeholders in sports and conduct future research.

Keywords:- cannabidiol (CBD), sports, doping, prohibited substances

I. INTRODUCTION

In today's sport, there are a growing number of cannabidiol (CBD) products available for purchase in various forms such as: e-liquids, vapors, extracts, oils etc. Cannabidiol is one among 110 known cannabidiols extracted from the cannabis plant. It has a different chemical structure than THC, a psychoactive compound used by illegal drug users to achieve a state of mental euphoria; cannabidiol does not have such an effect (Gieringer et al., 2008). At the end of 2018, CBD was not listed in the World Anti-Doping Agency's (WADA) Prohibited List, so it is allowed to be used in the sports system. All other cannabidiols such as THC, cannabis, hashish, marijuana, are banned in the sports system. Hence, if an athlete uses a prohibited substance, it is at athlete's own risk and they are personally responsible for all the substances in their organism, as stated in clause 2.1. Regulations for the fight against doping in sports. According to the relevant services, a substance (THC) with a tolerated threshold substance that is reported as an unfavorable laboratory finding when present in urine has concentrations greater than 150 nanograms per milliliter. Other cannabidiols do not have a tolerated threshold, therefore even the smallest amount of

them is considered as an unfavorable laboratory finding. This paper analyzes the use of illicit substances in sport, i.e., criminalization of doping as such, which eventually means that the person caught in illicit activities is held responsible both in sport systems and civil law. It is of vital importance that those who educate and train athletes make sure that they prevent any possible use of doping in sport and to state that publicly, clearly and in a memorable way. Sports Community of the City of Zadar created a research survey conducted on the population of athletes whose clubs are members of the Sports Community of the City of Zadar. The aim was to examine the attitudes and beliefs of participants (athletes) about their knowledge of cannabidiols, their use and significance of those substances.

II. CANNABIDIOL, WHAT IS IT?

Cannabidiol, i.e., CBD is the third isolated cannabinoid compound. It was discovered in 1940, about twenty years before the most famous THC. CBD makes up 40% of industrial hemp extract and is its main cannabinoid. Furthermore, it is important to emphasize that it is not psychotropic (www.medicalnewstoday.com). Initially it was speculated that in humans and animals cannabinoids act by non-specific binding to cell membranes, but it was later discovered that the compounds have a specific binding sites in animal brains. In the early 1990s, the scientists were surprised to discover that the human body is able to produce its own cannabinoids. One of them is anandamide, colloquially called "the molecule of happiness". The name of this endocannabinoids originates from the Sanskrit word *ananda*, meaning *happiness and bliss*.

Nowadays the main products made of industrial hemp can be found in the form of oils, tinctures, waxes, spreads and various other supplies obtained from the seeds of this increasingly present plant in our everyday lives, whether we talk about food or cosmetics (www.marihuana.hr). So far, the hemp oil shows better results in terms of quality than any other vegetable oil, and it has also been proven that it contains higher ratios of omega acids that are essential for overall health. As a cannabis composition, CBD has well-founded health benefits.

Before an explanation of what CBD is, it is important to mention what it is not. It is not psychoactive; therefore no emotional effects should be expected or feared. CBD, or cannabidiol, became interesting to scientists as one of the hundred ingredients found in industrial hemp. In the fibers of industrial hemp, CBD is usually found in the upper part of the stem and the flower, and the scientists are

particularly interested in researching its therapeutic effects on various diseases and their symptoms (Gieringer et al., 2008). Unlike hemp oil that is obtained by cold pressing of the hemp seeds, obtaining and extracting CBD oil requires a different and more specific method in order to extract the CBD ingredient (Potter and Joy, 1998).

III. CANNABIDIOL'S STATUS IN SPORTS

Sports organizations and meritorious sports federations have started to examine cannabis due to the fact that cannabinoid from it can enhance athletic performance and support and accelerate the process of recovery as well. Moreover, unlike THC, CBD does not cause failed drug tests, or in other words, does not show adverse effects (Mead AP. 2014).

Due to that, D. C. McCaffrey was dealing with the question whether CBD is good for use in sport, i.e., is it good for athletes? It is a valid question, especially if we have in mind that the method most often used in fighting the symptoms of pain with both amateur and professional athletes is the use of anti-inflammatory drugs and opioids, such as NSAID. However, many people in the area of sports do not understand enough the fact that even everyday drugs have multiple side effects that in some extreme cases can even lead to death. According to the *CBD Assist*, CBD oils as well as other products derived from medicinal cannabis offer a non-addictive, non-toxic alternative for combating acute and chronic pain without side effects. Despite great efforts on a worldwide scale to legalize cannabis and cannabis-based products in many countries, when it comes to the area of sport numerous professional sports organizations still disapprove its use. Therefore, while the medical and therapeutic use of CBD is being considered, some parallel researches continue to prove what some athletes know for over a decade: CBD and cannabis can be a viable method for pain relief without destructive side effects.

IV. THE RISK OF USING CANNABIDIOL (CBD) FOR ATHLETES

Despite its permitted status, there is a certain risk to users in the sports system, especially within the area of sports recreation. Those who use it, whether professional or recreational athletes, have to be aware of that fact and take into consideration the risks of inadvertent use of CBD products that may have higher than expected levels of THC or some of the other cannabinoids that can be found on the list of banned substances in sport. Such cases can occur if the product itself becomes contaminated with different types of hemp that have high levels of concentration of THC, or there has been a mistake in identification and inappropriate part of the cannabis plant was used. As shown in a study documenting cases of THC detection, where some CBD products have higher levels than permitted under FDA standards, and published in the Journal of American Medical Association in 2017, American Food and Drug Administration (FDA) is continuously publishing quality control analyzes of CBD

products for the US market. A study published in "Forensic Science International" in 2018 also discovered that the banned cannabinoids (5F-ADB) can be found in commercially available CBD e-liquids and used by recreational athletes. Research conducted by independent laboratories could help in minimizing the use of CBD in the long run when it comes to professional athletes and recreational athletes. However, such research has not yet been confirmed. A great number of manufacturers conduct and publish their own research, but their reliability is not known yet, as well as their relevance. Therefore, to be completely sure that the product does not contain cannabinoids that are banned, athletes should not rely on such test results for CBD products. As previously stated, an athlete is fully responsible for every prohibited substance or its metabolites and markers found in their samples. Therefore, the risks of using a CBD product do not necessarily entail athlete's guilt, intent, negligent behavior or deliberate use to establish that the anti-doping rule has been violated according to the clause 2.1. Furthermore, CBD products are treated in the same way as any other supplement and any individual who has an unfavorable analytical finding will subject appropriate sanctions, i.e., the same procedure will be done as with any other doping case (Mead Ap. 2014).

V. THE SUBJECT AND GOAL OF RESEARCH ON KNOWLEDGE OF CANNABIDIOLS, THEIR USE AND IMPORTANCE OF THESE SUBSTANCES FOR SOCIETY

Topics related to the knowledge of cannabinoids, their use and the importance of these substances for society is often in the focus of the public and media. Due to that, the author of this paper conducted a research in different sports clubs, i.e., the members of the Sports Community of the City of Zadar.¹ The questionnaires were filled out by members of these sports associations, i.e. athletes, coaches and sports staff. The answers of the respondents were analyzed, and it should be taken into account that a number of respondents were in the situation of dealing with cannabinoids for the first time, i.e. they do not know them well enough.

The aim of this paper is to determine whether respondents are familiar with what cannabinoids are, the harmfulness of their use in sports and the importance of these substances for the sports population in our society.

According to the aim of the research, it is possible to set a hypothesis that the respondents do not have enough knowledge on cannabinoids and the impact of their use on sports population.

¹ The author is employed as a secretary general at the Sports Association of the City of Zadar

VI. METHODS

For the purpose of testing the knowledge of cannabidiols, their use and their importance for the society, a survey method has been used and an appropriate survey questionnaire was created. The survey presents a quantitative form of research that seeks to gather different perspectives and opinions of respondents and determine the impact of cannabidiol use on sports population.

The sample of respondents consists of 130 sports employees, athletes and coaches that are members of the Sports Association of the City of Zadar. The paper analyzes the results of the questionnaire. Survey questionnaire included 125 respondents, i.e. all of those who completed the questionnaire during its implementation. The questionnaire was first constructed and then tested on a group of 3 respondents (coach, athlete, sports worker), afterwards the rest of the participants completed it. The survey questionnaire consisted of 12 questions grouped into two units: a general one and a research one. The first part of the survey questionnaire refers to general data, while the second part consists of questions that aim to answer the hypothesis set. After the implementation of the survey method, the completed survey, questionnaires in the printed form were entered into the *LimeSurvey* program and exported to a specialized statistical program SPSS for further statistical processing.

VII. RESULTS AND DISCUSSION

As it was previously mentioned, after the survey was implemented, the analysis of the responses was done.

The results showed that there were more male (65%) than female (35%) participants in the survey and that the participants between 25 and 35 years prevail.

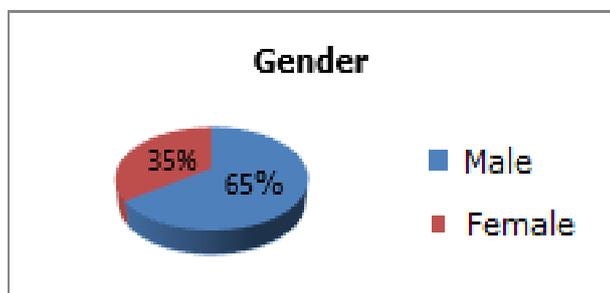


Fig 1:- Overview of research examiners by gender.

By asking *What are cannabidiols?* it became clear that athletes and sports professionals are not sufficiently aware of what cannabidiols are, and this can be seen in the example in Table 1: Do athletes know what cannabidiols are? The greater part of respondents (39%) believe that athletes and sports professionals are not sufficiently aware of what cannabidiols are, a smaller number of them (15%) believes that they are partially unaware, and 35% of the respondents do not know enough about cannabidiols. Only 7% of the respondents are partially aware and familiar with cannabidiols, while 7% of the respondents claim that

athletes and sports professional are fully familiar with cannabidiols.

Completely not familiar with	Partially not familiar with	Neither familiar with nor not	Partially familiar with	Completely familiar with
35 %	15%	39%	7%	4%

Table 1:- Answers to the question Are athletes and sports professionals familiar with what cannabidiols are?

Furthermore, with the group of questions related to the health status of athletes using cannabidiols and the harm to athlete’s health the following results were gathered (Table 2). 55% of athletes claim that their health status improved since they use cannabidiols, 28% of them claim that their status is unchanged, and 14% said that their health status became worse.

Worse	Unchanged	Improved
14%	28%	58 %

Table 2:- Summarized results of the group of questions Health status of athletes when using cannabidiol.

The appropriate number of the respondents to the survey stemmed from the desire, i.e. motivation of the respondents for this topic and its significance for modern society, and the author’s subjective opinion on the “actuality of the respondents” needs to be expressed as well. It should also be noted that the modern IT technology was used while completing the survey questionnaires, in other words, the survey questionnaires were completed online via specially designed application. Based on the conducted research and the results of the questionnaire filled out by the participants of the program (125 out of 130 total), several topics were opened that should be discussed in the future, such as organizing professional seminars and workshops to reach the desired population. With the method of survey questionnaire different attitudes and opinions (satisfaction) on the use of cannabidiols was examined, as well as their harmfulness for the health of the athletes. According to the aim that was set and the results of the survey questionnaire, it can be confirmed the hypothesis that athletes and sports professionals are not familiar enough with what cannabidiols are and what is the impact of its use on athletes and recreational athletes.

VIII. CONCLUSION

Uncontrolled intake of any substance in the field of sport can cause certain negative manifestation that, when speaking of professional athletes, are not correlated with the rules of sports organizations in which athletes compete, and can have an impact on their health as well, while when speaking of recreational athletes, the changes can be reflected primarily on their changed health status.

There exist an increasing number of products made of cannabidiol (CBD) that can be purchased on the market around the world, and thus in the fields of sport as well. Those products come in various forms, such as e-liquids, vapors, extracts, oils, etc. According to that, CBD is one among about 110 known cannabidiols produced by the cannabis plant. It has a different chemical structure than THC, which is a psychoactive compound used by illegal drug users in order to achieve a state of mental euphoria. Cannabidiol (CBD), on the other hand, has no such effect.

Therefore, in order for an athlete to be able to recognize illicit things, he or she must know more about them. Due to that, it is of vital importance that those who educate athletes and conduct training processes prevent the use of doping of any kind in sports, and that they transfer that message to athletes and all sports professionals. The author organized and conducted a survey on this topic on the population of athletes and sports professionals whose sports clubs are in the system of the Sports Association of the City of Zadar. The aim of the research was to examine the attitudes and opinions of respondents (athletes and sports professionals) about their knowledge of cannabidiols, their use and the importance of these substances for general health status. The results of the research clearly indicate that the athletes and sports professionals within the system of the Sports Community of the City of Zadar do not know enough about what cannabidiols are and what its impact on professional and recreational athletes is. This is particularly alarming, given the possibilities provided by modern technologies for easy and uncontrolled access to these substances, and their consumption without the supervision of experts.

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